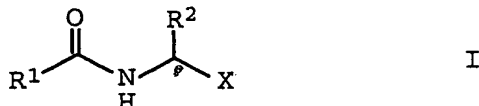


We claim:

1. A process for preparing N-acyl derivatives of the formula I,



- 10 in which the substituents independently of one another have the following meanings:

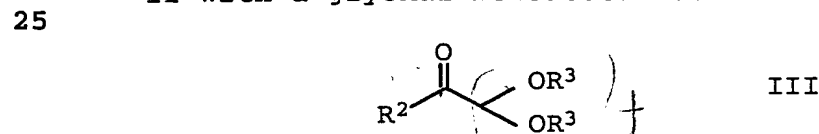
X is $\text{CH}(\text{OR}^3)_2$, COOR^3 ;

- 15 R^1 is hydrogen, C_1 - C_{12} -alkyl, aryl, unsubstituted or substituted;

R^2 is hydrogen, C_1 - C_{12} -alkyl, aryl, unsubstituted or substituted;

- 20 R^3 is C_1 - C_{12} -alkyl,

which comprises reacting a carboxamide $\text{R}^1\text{-CONH}_2$ of the formula II with a glyoxal monoacetal derivative of the formula III,



- 30 in the presence of a carboxylic acid $\text{R}^4\text{-COOH}$ of the formula IV where $\text{R}^4 = \text{C}_1$ - C_{12} -alkyl, where the substituents R^1 to R^3 are as defined above.

- 35 2. A process as claimed in claim 1, wherein the substituents have the following meanings:

X is COOR^3 ;

- 40 R^1 is hydrogen, C_1 - C_8 -alkyl;

R^2 is C_1 - C_8 -alkyl, aryl, unsubstituted or substituted;

R^3 and R^4 are C_1 - C_8 -alkyl.

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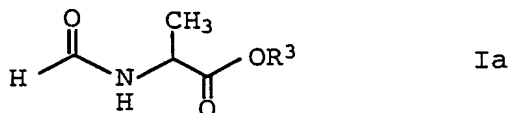
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3. A process as claimed in claim 2, wherein the substituents have the following meaning:

R¹ is hydrogen;

R² to R⁴ are C₁-C₈-alkyl.

4. A process as claimed in ^{Claim 2} ~~any of claims 2 or 3~~ for preparing N-formyl- α -aminopropionic acid esters of the formula Ia



15 in which the substituent R³ is C₁-C₈-alkyl.

5. A process as claimed in claim 1, wherein the substituents have the following meanings:

20 X is CH(OR³)₂;

R¹ is hydrogen, C₁-C₈-alkyl;

R² is C₁-C₈-alkyl, aryl, unsubstituted or substituted;

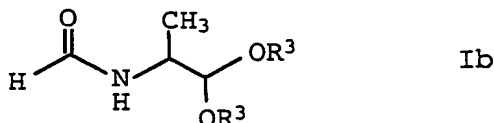
25 R³ and R⁴ are C₁-C₈-alkyl.

6. A process as claimed in claim 5, wherein the substituents have the following meanings:

30 R¹ is hydrogen;

R² to R⁴ are C₁-C₈-alkyl.

- 35 7. A process as claimed in ^{Claim 5} ~~either of claims 5 or 6~~ for preparing N-formyl-2-aminopropionaldehyde derivatives of the formula Ib



45 in which the substituent R³ is C₁-C₈-alkyl.

a 8. A process as claimed in ¹⁰ ~~any of claims 2 to 4~~ ^{claim 2}, wherein the amount of the respective carboxamide R¹-CONH₂ and carboxylic acid R⁴-COOH employed is from 250 to 800 mol%, based on the acetal of the formula II employed.

5 9. A process as claimed in claim 8, wherein the amount of the respective carboxamide R¹-CONH₂ and carboxylic acid R⁴-COOH employed is from 400 to 600 mol%, based on the acetal of the formula II employed.

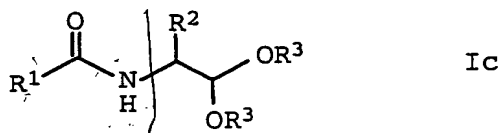
10 10. A process as claimed in any of claims 8 ~~or 9~~, wherein the carboxamide R¹-CONH₂ and the carboxylic acid R⁴-COOH are employed in the reaction in a molar ratio of 1:1.

a 15 11. A process as claimed in ^{claim 5} ~~any of claims 5 to 7~~, wherein the amount of the respective carboxamide R¹-CONH₂ and carboxylic acid R⁴-COOH employed is from 50 to 250 mol%, based on the acetal of the formula II employed.

20 12. A process as claimed in claim 11, wherein the amount of the respective carboxamide R¹-CONH₂ and carboxylic acid R⁴-COOH employed is from 100 to 200 mol%, based on the acetal of the formula II employed.

25 13. A process as claimed in ^{claim 11} ~~either of claims 11 or 12~~, wherein the carboxamide R¹-CONH₂ and the carboxylic acid R⁴-COOH are employed in the reaction in a molar ratio of 1:1.

30 14. A N-acyl derivative of the formula Ic,



35 in which the substituents independently of one another have the following meanings:

R¹ is hydrogen, C₁-C₁₂-alkyl, aryl, unsubstituted or substituted;

40 R² is hydrogen, C₁-C₁₂-alkyl, aryl, unsubstituted or substituted;

45 R³ is C₁-C₁₂-alkyl.

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15. A N-acyl-derivative as claimed in claim 14 in which the substituents independently of one another have the following meanings:

5 R^1 is hydrogen, C_1 - C_8 -alkyl;

R^2 and R^3 are C_1 - C_8 -alkyl.

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